505 might hear a piano or phonograph music from somewhere. That they still must quickly take a look at. The entire crowd rushes busily into the house concerned and up the stairs. Their curiosity is soon satisfied and they come down again and now they must be off quickly so as to be able to make use of the tide current. Their
501 unpainted canoes are 8 to 10 meters (Translator--about 8 to 10 yds.) in length and from 70 to 90 centimeters (Translator--2 1/3 to 3 ft.) in width. They are slim and pleasing in shape and have
[531] black colored decorations around the edges. Each one of them accommodates from 5 to 8 persons, close together, with their meager belongings. They paddle along nimbly with their leaf-shaped oars and, while their canoes glide along silently and swiftly, the entire crowd has soon disappeared in the mouth of the
484 Mira River. It will take them two days to reach their hometowns.
648 During the journey they camp in the open over night, somewhere along the shore, in an empty pasture. But they have to be careful. Occasionally they are attacked and robbed there by Negroes, and if they resist, they are murdered in cold blood. Only recently a whole group of them, men, women and children, 14 persons altogether, were most cruelly murdered on the Mira River by some bestial Negroes.

101 [285] However, our friends will now have arrived home safe
342 and sound on the upper Cayapa River. They are greeted from afar
361 by the friendly smoke of their own hearths. Their villages con-
824 sist of a few, widely dispersed bamboo huts of a most primitive type. A few uncut tree trunks have simply been rammed into the earth in a rectangle. The floor is at a height of 3 to 4 meters (Translator--ca. 3 to 4 yds.) and is made of split bamboo. Above this, at an equal distance, is the roof made of coconut (?) palm (Steinnusspalme) leaves. That is the entire structure. Since these houses have no walls, it is obivous that doors and windows are not
417 required either. The trunk of the Ceiba trees, light as a cork,
824 into which a few steps are hewn, serves as stairs. (The Ceiba tree
512 produces the silk-like balsa wool, called "Kapok" on the European market.) These stairs are obliquely leaned on, without being fastened anywhere. A hen-roost can be climbed more easily than one of these Cayapa ladders. In order to be somewhat safe from surprises by unwanted visitors, the ladders are drawn up to the living quarters overnight, and when a family goes on a trip, the ladder is thrown into the river and left to float away. After
322 all it is so simple and easy to fetch another Ceiba trunk from the nearby forest on returning and quickly hack a few step-like cuts into it with a chopping knife.

|81| Left to themselves and untouched, the Cayapa are gay, content and happy. Politics and book knowledge do not trouble them. The forest, fields and rivers yield in abundance everything they need for living. They know all the medicinal herbs and roots of [824] their region and know exactly which will protect them against snake bites and which one will cure their toothaches. The administration of the community is in good hands and does not cost anything; they do not have to pay taxes or tributes. They do not bother with what goes on in the cities of the white men and the outside world. Their main concerns are the instincts of nature, women and children, eating and drinking; they are indifferent to everything else, because they neither know nor understand it. Their simple and carefree life makes them happy—they are richer than we who, as a result of rushing and ambitious pushing, cannot find peace and happiness. They are happier in their ignorance than we, who proudly call our thin varnish of culture "civilization" and who scornfully characterize the Cayapa as "savages."

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731 floods it not infrequently happens that the waters rise
361 so high as completely to surround the house, and indeed sometimes to within a few inches of its floor.

132 The excessive rainfall naturally produces great humidity,[3] which would be very oppressive were it not for the fact that the sky is almost constantly overcast, so that the full power of the sun is rarely felt in the region. This fortunate circumstance renders the climate, which would otherwise be almost intolerable, very equable and pleasant.

RESOURCES

TREES AND PLANTS

137 By virtue of the climatic conditions above set forth the vegetation of the Cayapa region is typically tropical. Almost every foot of ground is covered by a dense jungle growth comprising many species of trees, palms, shrubs, and smaller plants, and characterized by an abundance of vines and parasitic vegetation. So dense is this growth that it is practically impossible to travel on land even a short distance without the use of a machete.

137 Among the most important and characteristic plants
824 of the region are the various species of palms, many of which are put to use by the Cayapa in one way or another. In the following list of the trees and plants of this section are given the Cayapa and the local Spanish names of those palms which are most useful to the

[3] One of the engineer's reports, above referred to, places the humidity at an average of about 80 per cent.

Bull. Bur. Ethnology, Bull. 116, pp.
9-11.--AJ

[p. 6]

3: Barrett E-5 (1908-1909)1925
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Indians. A number of these palms produce foods, and several provide leaves which are used in making house-thatch, while the trunk of one makes a durable flooring for houses. These matters will be taken up more specifically in the discussion of these subjects.

Another characteristic plant is the giant bamboo, which grows in clumps at frequent intervals along the banks of the rivers, especially along their lower courses. This bamboo often reaches a height of seventy feet or more, and has a basal diameter approximating ten inches. These immense stems serve various useful purposes, among the most important of which may be mentioned that of joists and rafters in house-building.

There is a great variety of trees in the jungle, many of which produce useful woods. Perhaps the most important uses of wood among the Cayapa are in house construction and in canoe-making. In the former the guayacan, which provides the almost indestructible pillars that support the pile structures, is of greatest importance. Several varieties of trees are used in canoe-making, but two or three kinds are preferred to all others.

Another characteristic of the jungle is the association of many species of plant life together in one area. Whereas in the North Temperate zone it is customary to see large tracts of land occupied by a single principal species of tree, such as the pine, in this Ecuadorian region a considerable number of trees of one species growing close together and in such manner as to form anything comparable with a grove is rarely seen. As a

3: Barrett E-5 (1908-1909)1925
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137 rule the various species of trees are associated in a strictly heterogeneous manner, and in all cases there is a fairly dense undergrowth, besides vines and aerial roots in abundance. These latter hang from the trees in such profusion as alone to make it necessary to cut a trail in proceeding even for a short distance by land.

●824 Of these aerial roots the one known by the local
137 Spanish term *pitigua* deserves special mention. It is very strong and durable, is little affected by climate,
[342] and is not attacked by insects. It is, therefore, extensively employed in binding joints in house-building, and indeed wherever a good binding material is needed.
[285] It is also extensively used in making certain kinds of basketry.

This general mention of the natural vegetal resources of the Cayapa region will suffice for present consideration, but the separate plants and their particular uses will be treated in detail in the following pages in connection with matters with which they are particularly concerned.

The heterogeneity of the flora of the region, above referred to, is fortunate for its inhabitants, since it places nearly every kind of plant, on which so much of the culture of the Cayapa Indians depends, within comparatively easy reach of all. That the flora should be so varied in any given locality, and that any given species should be so generally distributed, is due to the almost identical climate, soil, and other environmental conditions throughout the region.

The following is a list of the principal vegetal resources, both indigenous and introduced, employed by the Cayapa:

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Trees and Plants

ENGLISH	SPANISH	CAYAPA
	guayacan	waiaka'n[4]
rubber	caucho	sa'be
cedar	cedro	inū'n-tcī, or inō'n-tcī
	guadaripo	tū-tcī
	amarillo	pītōa'lō
	balsa	na'na
	dama jaua	te'ckī-tcī or tū'ckī-tcī
	achote	ca'imū (canyūñ-tcī = the shrub)
	hawa	ma'iñ-tcī
	guabo	cī'lyū (cī'-tcī = the tree). See p. 109
	guabo macheton	mactē-pa' cīlyū
	guabo dulce	pī' cīlyū
	guabo tacoane	ni'ñga cīlyū
	guabo agria	sa' cīlyū
		pū' cīlyū
calabash	calabaza	wa'iyū (wa'i-tcī = the tree), also cu'lya
chocolate	cacao	kaka'bō
papaw	papaya	papa'ia
	caimito	a'kū'iñya (akūi'ñ-tcī = the tree)
	zapote	sapō'te
orange	naranjo	la'nsa (lansa'-tcī = the tree)

[4] In some instances these names are invariably given by informants with *tcī*, signifying tree, following the root of the word; in others this is never added unless it is intended particularly to show that the tree itself is meant. In some cases the addition of *tcī* causes considerable phonetic change in the root. In those cases where the simple root form and also the compound form were obtained, the latter follows the former in parentheses.

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English	Spanish	Cayapa
lemon	limon	lē′mō (lēmō′-tcī = the tree)
	chocolatillo	tcōkōla′ɬe, tcōkōlaſī′a
sandpaper tree		lya′pic-hakī
plantain	platano	pa′nda
banana	seda	sē′da, sēda-kīnī′a
	hoja blanca	fī′ba-hakī[5]
	hoja negra	e′lūñ-hakī
sugar-cane	caña dulce	e′lla
wild cane	caña brava	nya′nyī
corn	maiz	pī′cū
tobacco	tabaco	ta′kō
	yuca	kū′′tcū, kū′ctcū
	rascadera	ɬū′a
pineapple	piña	tcī′lya
pepper	aji	tyū
	yerba buena	ēvī vē′nō[6]
pumpkin	sapayo	ū
	kuna-kuna	wa′-tcī
	matamba	bī′ta
		nintcū′a[7]
	tangarea	ōlō′n-tcī
	Palms	
ivory nut	palma tagua	tī′mō būlō (ti′ñ-tcī = the palm)[8]
	palma real	ūya′-tcī

[177]

[5] This term, like the Spanish *hoja blanca*, signifies "white leaf."

[6] The name of this introduced plant is obviously a corruption of the Spanish.

[7] A porous vine used as a smoking material by children.

[8] In the majority of cases the names given by informants for these palms are combinations of the simple names of the palms with the word *tcī*, signifying "tree." The five cases in which the simple name was obtainable are here noted, the compound terms following them in parentheses.

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ENGLISH	SPANISH	CAYAPA
	palma palmicha	sā′wī (sa′n-tcī = the palm)
	palma chonta dura	ka′imbī (kanō′-tcī = the palm)
	palma chapil or milpeso	kūla′pō-tcī
	palma guividnande	vīñga′-tcī
	palma guinul	pūka″-tcī
	palma pambil	bū′a (bū′iñ-tcī = the palm)
	palma crespa	pī′nlya-tcī
	palma chontilla	pē′aputc
coconut	palma coco	kō′kō (kō′kō-tcī = the palm)
fan-leaf palm	palma rampile	pī′tcūa ya′ha kapi′m-tcī

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GAME

Game is abundant in the jungle, and there are fish of various species in the streams. The ocean is within a comparatively short distance and its shores abound in many species of Crustacea and mollusks, as well as in the various salt-water fish, all highly prized by the Indians. 136

The specific uses of each species and its mode of capture, together with other points of interest in connection with it, will be taken up in detail at appropriate points in the following pages. For the present purposes it will be sufficient to give lists of the principal mammals, birds, fishes, Crustacea, mollusks, reptiles, and amphibians which are found in the region.

These lists, like the list of trees and plants previously given, are by no means complete, since they include

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motion is desired, a string with a grip is used. Occasionally a girl may be seen spinning a top, but it is primarily an amusement of the boys.

MATERIAL CULTURE

Buildings

The buildings of the Cayapa may be divided into four classes: the dwelling or regular abode, the rancho or temporary structure, the cane-mill and distillery, and the church, this last, of course, being of modern introduction. All these buildings, except the church, which is at ground level, are pile structures and are constructed according to a single general plan.

In pls. I-IV are shown typical dwellings. They are always rectangular in ground-plan (pl. XI), and vary in size according to the number of occupants, some reaching large dimensions. The dwelling of which the above-mentioned ground-plan is presented is 87 feet in extreme length and 41 feet in width. Dwellings are almost invariably situated along the river bank, and each is flanked by fields of sugar-cane, plantains, bananas, cacao, pineapples, and other crops. The dwellings are raised four to twelve feet from the ground, and access is gained by means of ladders such as those illustrated in fig. 1, especially those of the types shown in *a* and *d*.

The houses are fairly simple in construction. The framework consists of a number of heavy squared posts of a hard black wood called by the local Spanish name

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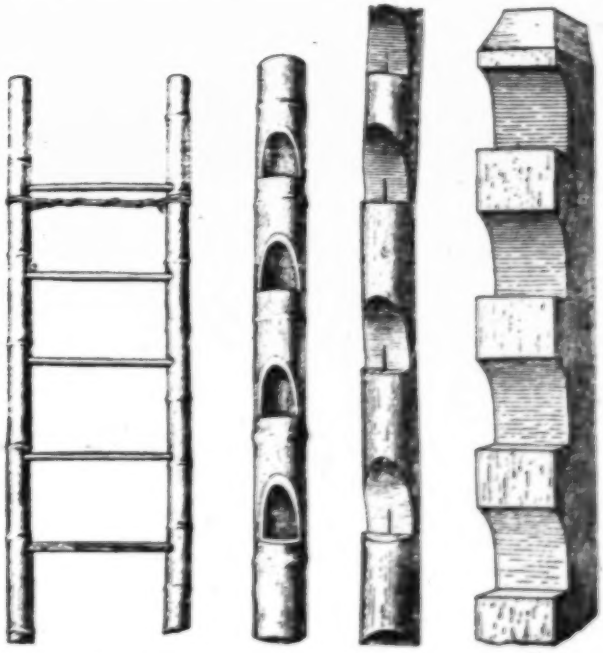
342 guayacan, in which notches are cut at the level of the [824] floor (pl. XIII, *b*) to hold the stringers that support it. The tops of these posts are also notched for the beams that support the superstructure. The sides of the

[417]



a *b* *c* *d*

FIG. 1.—Types of ladders

[824] building are entirely unenclosed. The roof is steep and is thatched with palm leaves. Sometimes a single roof covers the whole building, as in those structures shown in pls. II, VII; but upon the larger buildings it is ordinarily in two parts, as indicated in pls. X, XI. While the floor in such a structure is continuous, the presence

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of these two roofs serves to separate the building into two parts: one for the general living and sleeping room, the other for cooking. The structure is thus given the appearance of a double house, although the floors of the two rooms are always at the same level and the house is a unit in every respect except the roof. The double roof serves to exclude the smoke, which rises from the open fire-box in the kitchen, from the living and sleeping room. This division of the roof results in two inner gables, the eaves of which are brought within the area of the house itself (pl. XI, *h*, *i*) and under normal conditions would allow the rain-water to fall upon the floor. To prevent this, a large eaves-trough is made by hollowing out half of the long trunk of a species of palm locally called pambil (Cayapa, bū'iñ-tcī). The roof always projects a considerable distance beyond the edge of the floor, so that rain-water from the eaves falls at a distance of at least three or four feet from the sides of the building, and the eaves extend far enough down to prevent the wind from blowing the water back on the floor. As before stated, the ordinary dwellings have no sides, but their place is partly taken by a more or less elaborate railing, such as that shown in pl. V, which lessens the danger of one accidentally falling from the elevated floor. Raised platforms are frequently constructed at one or more points along the sides of the building. Such platforms are from four to ten feet in length and from four to seven feet in width, as are those shown in pl. XI, *e*. The roof is correspondingly extended to cover them. These platforms are raised usually

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in pl. VII. In some other dwellings another transverse beam (fig. 5, *f'*) is used as the support for the gable rafters.

In practically all cases in which two such stringers cross or where a stringer passes through a notch in a post, the parts of such a joint are securely bound together by one or another of the several methods shown in figs. 2–4. The binding material is a durable aerial root, called pitigua in the local Spanish, which is gathered and kept on hand for this purpose and for making certain kinds of basketry. It is kept in coils such as that shown in pl. XCI, 4, and when dry it needs only to be soaked for a short time to render it pliable.

The roof frame of such a building consists of a short central ridge-pole (pl. XIV, *i*), supported by two and in some cases three stout vertical bamboos (*m*) which in turn rest upon a horizontal beam (*j*) running lengthwise through the center of the building. The ridge-pole is of such length as to give the gable roofs a pitch of about forty-five degrees. It varies, therefore, according to the proportionate dimensions of the structure, but is usually from a third to a half as long as the building itself. The bamboos supporting the ridge-pole are, in the case of the large dwelling above mentioned, 13 feet 9 inches in height. The bamboo rafters of the sides of the roof rest directly upon and are bound to this ridge-pole. Those forming each gable are fastened together by means of a palm-wood rod passing through holes near the small upper ends of the rafters. This rod is bound to the two end-rafters of the sides of the

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roof, usually at a point two or three feet down from the ridge-pole. The other ends of these gable rafters are spread fan-like along the end beam (fig. 5, *f*, *f'*) of the superstructure so as to produce a complete frame for the attachment of the thatch of the gable. There is thus left at the top of this gable a small triangular opening, such as that shown in pl. X, which serves as a vent for the smoke from the open fire-box. The thatch is so laid on that it projects about two feet beyond the ends of the side roofs, while the thatch on the gable end just meets the underside of this projection. The projection of the ends of the side roofs in this manner prevents the rain from driving through the thatch along the line upon which the side and gable roofs meet, and it is also sufficient to prevent the entrance of rain through the triangular opening at the extreme top of the gable. The slant of the roof, both gable and side, is usually about forty-five degrees. The slant of the gable is regulated by the length of the short ridge-pole above mentioned. This whole construction of the superstructure of such a building is well illustrated in the unfinished dwelling shown in pl. VII.

The covering of the roof is a thatch of palm-leaves, usually those of the tagua, or ivory-nut palm. The necessity for a constant supply of these leaves, combined with the desire to perpetuate the supply of ivory nuts (since these are a source of considerable wealth), has caused the Cayapa to preserve carefully the groves of these palms. Even single palms growing quite apart from others are conserved. The trees, vines, and under-

3: Barrett E-5 (1908-1909)1925
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growth of the jungle are cut away from time to time around these palms, and about once a year, usually on the occasion of harvesting leaves for a thatch, the crown of leaves is trimmed. Any drooping dead leaves at the base of the crown are thrown away and the thoroughly mature healthy leaves only are selected for the thatch. Thus there remain at the center of this crown a number of young and more tender leaves which serve the needs of the plant itself and prevent damage to it which might otherwise arise from the loss of the mature leaves.

The tagua is a low-growing species of palm, the upper end of the stem, from which the leaves spring, rarely exceeding sixteen feet above the ground. The leaves are therefore easily gathered by means of a short ladder. This, combined with the fact that the tagua produces a very good quality of leaf, makes it almost the only species used for permanent thatch. While several other species of palm produce leaves of durable quality, they grow to such height that it is not expedient in most cases to gather the leaves except by cutting down the palm itself.

The tagua leaves, which reach an average length of about fourteen feet, have stout leaflets extending from the midrib at an angle of perhaps seventy degrees and for a distance of about three feet on each side of the midrib. To prepare the leaves for use, they are split in two along their midribs. Four of these half-leaves are then laid together so that the natural under-surfaces of the leaflets all face the same direction and the midribs are tied together with pitigua at two points.

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342 The last courses of thatch covering the side roofs are so laid as to overlap one another and to securely cover the ridge-pole. Further, another special course or two are laid along the ridge so as to guard against any possibility of leakage. Surmounting the roof along this ridge-pole is in many cases a rider made of bamboo and consisting of two or more sets of short bamboo poles crossed at the ridge and extending from three to several feet down upon the sides of the roof. To the points where these sets cross are bound a horizontal pole which serves to tie them together and to form them into a strong unit. Such riders may be seen in pls. II, VIII, X.

Though such a roof is carefully made, it is likely to leak a little from time to time as some small portion of the thatch which was not properly cured gives way or as some leaflets are eaten by insects. Such a leak is [324] quickly and effectually mended by placing a green leaf of hoja blanca between the courses of thatch at this point. These tough leaves are from three to four feet long and from twelve to eighteen inches wide, and effectually shed the water. In case, however, a considerable section of the roof becomes leaky, the area affected is re-thatched with tagua-leaves.

Buildings of the second class, the rancho or temporary structure, are built on the same general plan as are the permanent dwellings, except that they are much more [324] rudely constructed. In place of the well-squared, durable house-posts, bamboo is generally used. Further, in lieu of a thatch of a more durable kind of palm-

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leaf, a covering of the most available material is employed. The material used for this temporary thatch is usually a palm-leaf, but generally of some species of palm which provides a much less durable thatch than that used for the permanent dwelling.

These ranchos serve two purposes almost exclusively, namely, temporary shelters while traveling, and temporary shelters for work which lies too far from home to make daily journeys to and from the regular dwelling profitable. When traveling it is infeasible, not to say dangerous, to sleep upon the ground and without some kind of a roof, owing to the torrential rains which are almost sure to occur during the night, as well as to the danger from poisonous reptiles and other creatures. If, therefore, in traveling, it is impossible to reach a house by night, an early halt is made and a rancho constructed. This is rarely necessary except in case of a long trip over an uninhabited mountain trail, since along the navigable rivers are houses which may be reached in the course of the day's travel. Here the traveler, whoever he may be, is always welcomed according to the custom of the country, the unwritten law of which requires that shelter be given any traveler, whether he be an old acquaintance or a total stranger. When it is necessary, in gathering rubber or pita, in making canoes, or in doing any other work, to journey so far from the permanent dwelling as to make daily travel back and forth unprofitable, a small rancho is built. Such a structure may be used for a short time or for several seasons, it being re-thatched as occasion demands In the

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354 [283] twisted string of pita, by means of which one of the older members of the family, while performing some other task, keeps the hammock swinging.

302 Aboriginally both men and women wore long loose hair, without braiding or other special mode of dressing; but now long hair is worn only by the women, the men keeping their hair cut short. Some of the women cut the front hair even with the eyebrows, otherwise their hair is never cut, nor is it dressed in any special fashion, being simply parted in the middle and allowed to fall loosely over the back and breast. The only time that the hair is ever worn otherwise is when a woman is engaged in some very hot work; it is then often coiled up on the head or tied in a large knot at the back. The hair of little girls is never cut, but that of boys is cut when they are very young. As a rule the men have no special mode of dressing the hair; it is simply kept cropped to an even length all round, and is allowed to grow from the crown straight down in all directions, without parting or other training. Now and then a man may part his hair in the middle, but this practice is exceptional. These styles of hair-dressing are shown in pls. XVI–XXXVIII.

A characteristic feature of Cayapa life is the custom of painting the face and other exposed parts of the body with red, yellow, and black pigment, and in many different designs. The red and yellow pigments, called in Cayapa mū' and la''mū' respectively, are derived from the seed-pods of a small shrub known by the colloquial Spanish name achote and by the Cayapa name can-

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yū′ñ-tcī. This achote is of two different species, almost identical in general appearance. The seeds of one are surrounded with a yellow covering, those of the other with a red covering. When ripe, these pods are gathered, the seeds removed, and the color drawn off by soaking the pods in water, for a considerable length of time. This red or yellow liquid is then boiled down to a pasty consistency and mixed with any fairly hard fat, such as lard or the fat of the jaguar, the puma, or other wild animal. It is said that the viscous milky juice of a species of tree called sande is sometimes used instead of one of these fats; but the paint produced with it is not so good as that in which the fat is used. This strong, greasy pigment is applied with either a small pointed stick, if small dots or narrow lines are required, or with a wide carved stick called mōpɬtcpaɬ′pa (pls. CXXI, CXXII) if a wide line is desired or if a considerable surface is to be colored.

The black pigment, called ma′lyū, is obtained from the fruit of a tree called ha′wū. This fruit, which is globose in form and from two to three inches in diameter, is gathered while green and cut in halves. The seeds and the inner fleshy parts are then extracted and ground to pulp upon a mealing stone such as is used for grinding plantains. At the same time there is ground into the pulp a quantity of charcoal, and the result is a thin black paste. When dots and narrow lines are desired, this paste is applied to the skiñ with a small stick tipped with cotton; but when a wide line is to be made, it is applied with a finger.

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PITA LEAVES FOR MAKING CORD

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species now used, the one producing a globular fruit called wa'iyû, and the other an ellipsoidal fruit called cũ'lya, were introduced here from Colombia. Every house is provided with one or more of these trees, and usually at least one of each of the two species. These large gourd-like fruits are produced in considerable numbers by such a tree and find a variety of uses. They are gathered when just ready to turn from green to ripe and are immediately hollowed out into utensils of several kinds. The details of manufacture and the uses of these utensils are treated on pages 166–173.

Another fruit, some species of which are said to be indigenous and some introduced, which is found abundantly in this region, is what is called by the local Spanish name guabo or guaba. This requires no cultivation, but the trees are carefully guarded against destruction. It is rarely if ever purposely planted, but grows from the accidental dropping of seeds. In the vicinity of almost every house there are several trees of one or more of these species. The fruits, which grow in long pods, are much esteemed and are almost invariably eaten raw. Each variety has its own special name, as follows:

Cayapa	*Spanish*
mactẽ'-pa cĩlyû,	guabo de macheton (machete guabo, so named on account of the shape of the pod).
ni'ñga cĩlyû,	guabo de tacoano.
pĩ' cĩlyû,	guabo dulce (sweet guabo). The Cayapa name signifies "water guabo."
sa' cĩlyû,	guabo agria (sour guabo). The Cayapa name also signifies "sour guabo."
pû'cĩlyû,	guabo.

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[487] 484 along these rivers—these are used for hunting or for short trips from the rivers. All the permanent habitations are situated along the banks of the rivers, and to pass from one to another of these, as well as for making trips of greater length, the dug-out canoe, called kûʹle, 502 is used. In fact, the canoe is one of the most prominent features of Cayapa life. Everyone begins in early childhood the training which makes him an expert canoeman, and is perfectly at home in a dug-out, whether it be along the smooth sluggish waters of the lower course of the river, in the rapids of the upper course, or out on the ocean coasting to some nearby point.

396 From the important place the canoe holds in the life ●824 of the people, it is natural that much care should be given to its construction and that the art of canoe-making should have reached a high state of perfection. Of the many species of trees in the jungle, only a few produce woods which are hard and tough enough to be suitable for canoe-making. These qualities are found in certain species which have what may be called a criss-cross grain, that is, an interlacing of the wood fibers which makes splitting almost impossible. Though a considerable degree of hardness is required, too great hardness is not desirable. Certain woods, therefore, such as the guayacan, are too hard and heavy to be suitable.

396 [313] Having found a tree of the desired kind, it is felled with an ax and the canoe is roughly fashioned from a portion of its trunk, as is shown in pl. LXIX, and finally this section is cut loose from the remainder of the tree.

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LEAVES USED TO RUB DOWN PADDLES

[p. 148(A)]

3: Barrett E-5 (1908-1909)1925
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501 be called the grip. In a woman's paddle this end may be truly called the grip, and it is usually notched in more or less of a fish-tail form, shown in pl. LXXVI, 9 to 11. This notch is quite smooth, and is actually gripped by the hand. In the case of the man's paddle, however, a purely ornamental tip is put on the end, which is almost never touched in paddling. A few of the typical forms of these ornamental ends are shown in figs. 1 to 4 and 6 to 8 of the same plate.

[531] Occasionally various simple figures are carved either in relief or in intaglio near the upper ends of the paddles. An illustration of such carving relief is shown in pl. LXXVI, 9. Such ornamentation is seen frequently on women's paddles, but only occasionally on those of the men.

[824] As a finishing touch to paddles and in order to make them perfectly smooth, especially along their handles, they are rubbed down with the under-surface of a dry leaf called lya'pic hakī, which is covered with minute but very hard spines that serve the purpose of sand-paper. A bunch of these palmate leaves is shown in pl. LXXVII.

502 [462] Although on a long journey a woman may act as pilot of the canoe, a man sometimes serves in this capacity while the woman sits forward and paddles, as shown in pl. LXXX. Again, it is customary for the woman to use the short paddle on all occasions, but now and then she may be seen using the man's long paddle. Such an instance is shown in pl. LXXIX, where the pilot of the canoe in the foreground is a woman using one of

3: Barrett E-5 (1908-1909)1925
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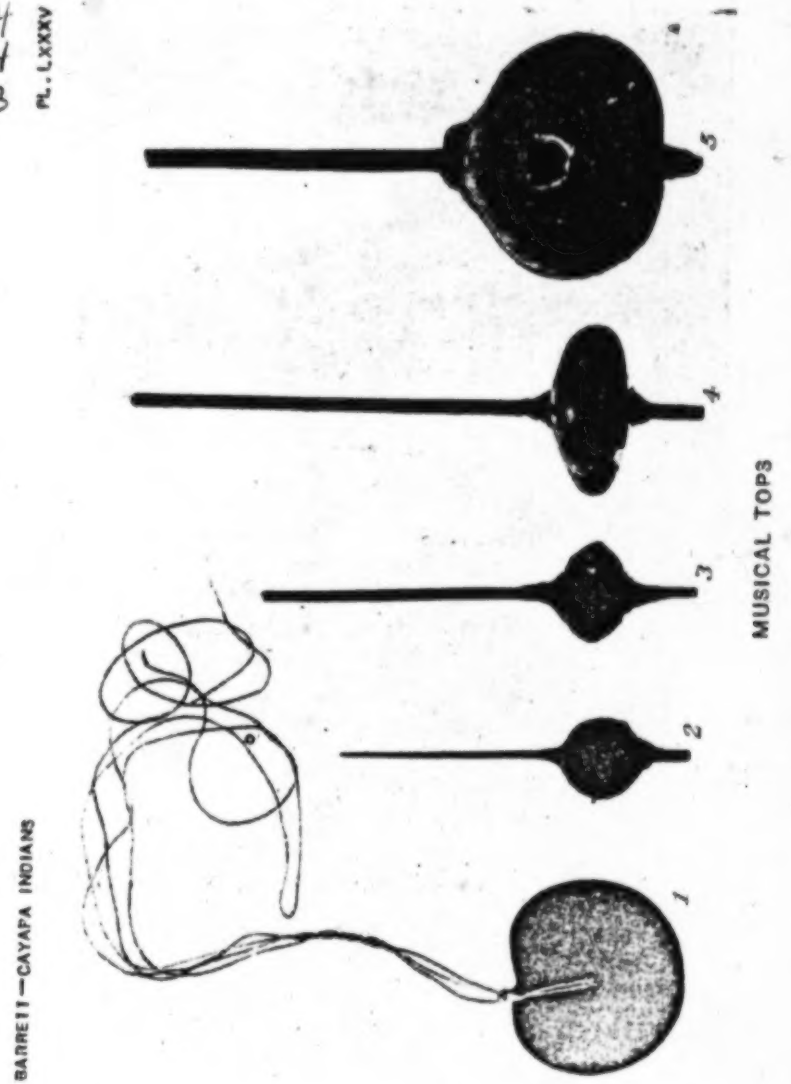
PL. LXXXV



p. 162 (B)

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323 After a pot has become fairly dry and hard, its surface receives the final smoothing, and in some cases it is given [824 almost a polish. This is done by means of a large 413] discoidal nut, called mūlūmbū mūñge'nū, indigenous to the region. The same nut is used in making tops and also the spinning handles for tops. In pl. LXXXV, 1, 4, it is shown used in these two ways. In smoothing pottery the edge of the nut is wet with saliva and is rubbed back and forth repeatedly over the vessel, thus smoothing the surface and making it more impervious by filling the pores. No slip or paint of any kind is used.

The vessels are now ready for firing. A quantity of wood is gathered and the pots are carried to an open place near the house. Here they are stacked one within another or arranged on the ground in any convenient manner, and a kiln is made by carefully piling wood around and among them. Coals are brought from the fire-box in the house, the pile is ignited, and the fire is carefully watched and more wood added as required. A pottery kiln is shown in pl. LXXXIX, the photograph for which was taken just after the fire was lighted. This firing process requires from twenty minutes to an hour, depending on the number and size of the pots, and the quantity of wood used. As the fire dies down, the pots are left as shown in pl. XC, being now thoroughly fired. The earthenware is generally removed with a pole while still hot, and is tested by tapping gently to detect any possible cracking. If badly cracked the vessels are [356] immediately thrown away, but in the case of large pots that are only slightly cracked, they are often kept and repaired with wax (brea).

3: Barrett E-5 (1908-1909)1925
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THE CAYAPA INDIANS OF ECUADOR

By S. A. Barrett

MANUFACTURES—*Continued*

Textile Arts

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THE Cayapa weave many useful articles from the native materials that abound in their territory. These objects comprise various types of basketry, one type each of fan, mat, cloth, and three of nets. Their finest textile work is the cloth woven from cotton and wool in elaborate patterns. The only other decorated textiles are fans, mats, and a few types of baskets. This class of decoration is due largely to the materials and to the technic of the articles manufactured, all of which are made from strips of the bark of one or another of five endogenous plants. These strips have different natural colors on their two surfaces, and by bringing their light or their dark sides uppermost, simple geometric patterns alone are worked out without further coloring. Such technic makes possible only a limited number of patterns, as has been pointed out by Dr. Max Schmidt.[14]

[14] Indianerstudien in Zentralbrasilien, Berlin, 1905. Besondere Geflechtsart der Indianer im Ucayaligebeit, *Archiv für Anthropologie*, N. F., VI, H. 4, 270–281. Braunschweig, 1907.

3: Barrett E-5 (1908-1909)1925
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BASKETRY

285 Cayapa basketry may be classified according to the materials from which it is made, its technic, and its forms and uses.

Classification according to materials is recognized by the Cayapa themselves, as is shown by the following terms:

MATERIALS

285 824 Pitigua = te'tcūa (the root of an aerophitic plant); te'tcūm pickalyī = basket made of te'tcūa.

Rampile = pī'tcūa (a species of palm); pi'tcūm pickalyī = basket made of rampile.

Hoja blanca = fī'ba hakī; fī'bañ pickalyī = basket made of hoja blanca.

Hoja negra = e'lūñ hakī; e'lūñ pickalyī = basket made of hoja negra.

Chocolatilla = tcōkōla'/e; tcōkōla'te pickalyī = basket made of chocolatilla.

Crinande = viñga'tcī; viñga' pickalyī = basket made of crinande.

Hoja de chapil = kūla'hakī; dīc-pūnūntsū'mī; kūla' pickalyī, kūla'pō pickalyī = basket made of hoja de chapil.

The word picka'lyī, which strictly signifies any kind of basket other than the burden-basket or the hamper-shape basket, is here used as a general term meaning baskets of all kinds. All considerations of technic, form, and use are omitted in the above classification, material only being taken into account.

The basket materials used by the Cayapa may be divided into three classes. First, the heavy strips or splints of the inner fibers of the aerial root called pitigua, used for making the more durable baskets such as those shown in pl. XCII, 1, 3, 4, 6–8, and in pl. XCIII, 1, 3, 4, 12.

3: Barrett E-5 (1908-1909)1925
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In the second class of material may be included the thin bark of five species of endogenous plants: rampile, hoja blanca, hoja negra, chocolatilla, and crinande, which are used for making the lighter and less durable baskets, especially the hamper-shape baskets such as those shown in pl. XCIII, 2, 5, 6, 10, 11, as well as diminutive trinket baskets like those in figs. 15–17 (pp. 200-201). These materials, especially rampile, are used also in making baskets of other forms, but requiring no great durability or strength. Baskets of this class are shown in figs. 7–9 of pl. XCIII. Rampile is also extensively employed in making fans and mats. In the third class of materials is the leaf of the palm known in Spanish as chapil, sometimes also called milpeso, and, by the Cayapa, kūla′pō. Two forms of basket, one conical, the other square-sided (pl. XCII, 2, 5 respectively), are made of this material. Such baskets are suitable only for temporary use, since after a day or two the material becomes dry and brittle; while green, however, it is pliable and fairly strong. The conical basket (fig. 2) serves a ceremonial as well as a utilitarian purpose, being employed by shamans in their medicine practices.

The most important of the various basketry materials is the pitigua. This durable fiber is derived from the long roots of a single species of aerophitic plant which usually grows in the upper branches of trees and sends its long, slender roots to the ground. Pitigua is much sought for various purposes by the negroes and whites of the region, as well as by the Indians, so that along the lower course of the Rio Cayapas it has become somewhat scarce. When the plant is found, however, its roots are

3: Barrett E-5 (1908-1909)1925
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easily gathered, since by simply pulling on them they usually break off at or near the plant itself, and often a root seventy-five or even a hundred feet in length is obtained. It is employed not only for basket-making but for many other purposes, such as for binding together the parts of a house-frame (figs. 2–5), for binding the palm-leaf thatch upon the roof (pl. VII), and indeed wherever material for tying or binding is needed. It serves also the many purposes for which civilized people use string and rope, as for mooring canoes, securing animals, etc. Pitigua fiber is practically indestructible so far as dampness is concerned, and may even be kept wet for a considerable time without rotting. If kept from direct contact with water, however, it will last for years even in this humid climate, as is shown by the bindings on the frames of some of the Cayapa houses that have been in use for ten or fifteen years at least.

When gathered these roots are usually made up into large coils (pl. XCI, 4) and laid away in a dry place until needed. To render them pliable they are soaked over night in the river. In two forms of baskets the warp elements are made of the smaller whole roots of the pitigua, otherwise the material is always split into strips or splints, which are prepared as follows:

The bark of the root being first removed, its inner woody portion is split into long, thin ribbons. The individual fibers of the root are extremely long and straight, hence when once started a ribbon can be split the full length of the root with almost perfect evenness. Usually one end of the root is taken up and split with a knife or machete, for a distance of an inch or two, into

3: Barrett E-5 (1908-1909)1925
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285 trimmed to approximately equal widths, but for ordinary baskets this is not deemed necessary.

222 285 824 In case the pitigua root is not available, there are other parasitic plants which send aerial roots to the ground that may be used for temporary baskets.

Of the less durable and lighter materials used for making hamper-shape baskets, the most important is rampile, which comes from the bark of the petiole of a fan-leaf palm which produces thin strips from one-eighth to one-half inch in width and from three to twelve feet in length. In splitting off this bark, the circumference of the end of the stem is cut with a sharp instrument into as many segments as the desired width of the strips demands. Usually the strips on several stems are started at one time and then the bark of each is split off by pulling with the fingers one strip after another. In splitting the bark in this manner, a certain amount of the inner succulent fiber of the stem is taken with it. To remove this a number of strips, perhaps twenty, are grasped between the great and second toe in such manner that one end of the bunch of strips reaches almost to the body. Thus held, the strips are taken in turn and the succulent portions cut transversely at a point a couple of inches from the end. The strips are now taken rapidly one by one and the bark is peeled from the succulent fibers. It remains only to size the strips, that is, to bring them to an even width. This is done by splitting, since in this material, as in the pitigua, the fibers are long and straight, so that when once started they part evenly the full length of the strip. It is rarely necessary to do any special cutting and trimming to make these strips of proper widths.

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The material of this class next in importance to the rampile is that obtained from the petiole of the hoja blanca, called by the Cayapa fi'ba haki, signifying, as does the Spanish term, "white leaf." This plant has a long pinnate leaf somewhat similar to that of the banana, but with a long, round, slender, and fairly hard petiole. It derives its name from the fact that the under-surface of the leaf-blade has a thick coating of white bloom. The strips of this material used in basket-making are obtained from the petiole of the leaf in the same manner as are those of the rampile, except that before splitting off the bark it is scraped. This removes a thin, succulent outer coat of light-green, and leaves the inner creamy-white bark which is hard and tough, though very thin. This hoja blanca bark is used chiefly for making small hamper-shape baskets (figs. 15–17) used as receptacles for trinkets, though it is frequently employed in making fans, especially the finer ones. It is much less durable than is the rampile, and for that reason, as also on account of its thinness, it is not adapted to the manufacture of large hampers or of mats.

The blades of the leaves of hoja blanca find a variety of uses, chief among which is as a covering for cargoes of canoes to protect them against rain. The leaves are much tougher than are those of most plants of a similar kind in this region and shed water perfectly. They are used even for repairing leaks in house-thatch, though they are never employed for entirely thatching a permanent building.

Hoja blanca is the only basket material which is ever artificially colored. The strips are stained with red

3: Barrett E-5 (1908-1909)1925
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285 386 achote, the plant which produces the red face-paint used by the Cayapa. This coloring matter is rubbed on the stem after it has been scraped down to the hard white layer of the bark and before the bark is stripped from the stem. The colored strips are used occasionally as a means of producing the geometric designs used in small hamper-shape baskets and in fans.

285 824 Three other plants with a habit of growth similar to that of the hoja blanca occasionally furnish materials for the hamper-shape baskets. They are the chocolatilla, called by the Cayapa tcōkōla'te, which yields a brown material; the hoja negra, called e'lūñ hakī; and the crinande, called viñga'tcī. The material in each of these plants comes from the petioles of the leaves. They are obtained and manipulated in the same manner as is that derived from the hoja blanca. None of the three, however, is ever colored.

285 482 [222] As above mentioned, the leaf of a large species of palm, called in Spanish chapil, is used on rare occasions for basket-making. Should a person be out hunting, or for any other reason be at a considerable distance from his house and unexpectedly find some fruit or other commodity which he cares to take home, he may, by securing a couple of the large leaves of the chapil, quickly fashion a temporary burden-basket, such as either of those shown in pl. XCII, 2, 5, in which to carry them. Such a basket is never kept for further use, for as soon as the leaves become dry they are very brittle and entirely worthless.

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285 in pl. XCV, 11, on the other hand, the outer horizontal element is absent and there is but one spiral element. In this instance, however, there are two horizontal elements running like wicker through the openings immediately below the border and serving to give additional strength to it.

Baskets of this technic are among those more rarely made by the Cayapa. They have no special use, but serve any of the many ordinary household purposes to which Cayapa basketry is put, such as the storage of small articles and various foods.

In addition to the six technics above described, here termed the regular basketry technics, there are the two employed to a very limited extent in making the palm-leaf burden-baskets, which are used temporarily and only in emergencies for carrying burdens, or are now and then employed ceremonially by some shaman in his medicine practices. Two of these baskets are shown in pl. XCII, 2, 5.

285 824 In the first the technic resembles checkerwork to a certain extent. Such a conical basket is made from a single large pinnate leaf of the palm called by the Spanish chapil and by the Cayapa kūla'pō-tcí. Such a leaf is often as much as ten feet long. Perhaps eight feet of this is serviceable for basket-making, the two feet near the tip of the leaf being rather weak and provided with short leaflets. Having broken off the unserviceable section at its tip, such a leaf is bent at its middle point and its leaflets are interwoven after the fashion of checkerwork, thus producing a loosely woven basket with large meshes. The remaining ends of the

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leaflets are at last wrapped about the edge and bound loosely to secure them and produce the border of the basket. 285 824

The second type of palm-leaf basket is square in cross-section and has vertical walls. In this, two leaves which are made to cross each other at the bottom are used. The bottom of such a basket is usually about a foot square and the walls are two and a half or three feet high. The midribs of the leaves pass up the middle of the sides, and the leaflets, entirely unwoven, form the sides themselves. Extending up the four corners are heavy rolls formed by these leaflets, and it is in these that the particular technic employed only in this type of basket is found. When the two midribs are crossed at their middle points, they are securely bound together to keep them in position during the manipulation of the leaflets in making the corners of the basket. At a point five or six inches from this center, each of the midribs is then bent upward. As the leaves are thus placed in position, the leaflets extending out from the right-hand side of one midrib cross those extending from the left of the adjacent midrib. Beginning at the bottom, one of these leaflets is passed round a corresponding leaflet of the opposite set, its end joining that of the leaflet it has just gone round in passing upward to help form a core about which the other leaflets are in turn passed. In passing about this core each leaflet goes completely round it, coming back to the front below itself and then folding abruptly upward over itself to enter the core. This produces the technic which in the preceding pages was likened to the "half-hitch" in 285

3: Barrett E-5 (1908-1909)1925
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285 to a certain extent for fanning themselves. As is shown
293 in pl. CIV this fan is always square and has a substantial
372 handle extending from one corner. Almost the only
[824] material used for fans is the bark of the petiole of the fan-leaf palm. On rare occasions the bark of the hoja blanca is employed, and such fans almost always show a pattern in red produced by coloring one set of the twilling elements with achote. Both these materials are prepared in exactly the same manner as in making basketry.

285 The blade of the fan is always made in the over-three and under-three form of twilling, while the handle consists of a bundle of the elements which form the blade, this bundle having an outer surface of twilling or wickerwork, as shown in pl. CIII, 5–9. Such fans are usually eight or nine inches square, though they are sometimes larger and frequently smaller. The larger fans are used almost exclusively for fanning the fire, while the smaller ones are used for giving personal comfort.

285 Fans are decorated with a considerable variety of
531 geometric designs of the same character as those found on mats, and in lesser variety on twilled basketry. Pl. CV shows a number of these patterns, which in most instances are without special name and in no case are they symbolic, as has been pointed out in treating the decorative art of the Cayapa.

285 The exact manipulation of the splints used in fan-making is shown in pl. CIII, 14 and 15, which exhibit respectively the uppermost corner and the right-hand corner of the front or upper surface of the fan. In detail the manipulation is as follows: A single long

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pulling upon those loops which contain the particular warp strands which it is desired to bring forward. When these are brought forward the weaving batten is passed behind them and the whole set of warp strands is properly separated and ready to receive the woof. This is accomplished by passing the shuttle through below the weaving batten, which is placed with its edges horizontally in order to separate the two sets of warp strands. 286

In threading up the loom, the warp threads are fastened to a thin, narrow, palm-wood rod (*l*). A heavier rod (*k*), on either side of which one-half of the warp strands pass, is fastened by means of loops to *a* and *b*, and bears the strain of the weaving as the batten is brought down with considerable force in order to drive down the preceding course of woof and produce a tightly woven piece of cloth.

The only remaining movable element of the loom, except the batten and the shuttle, is the width gauge (*m*), which is used to hold the manta to an exact width. This rod is made either of bamboo or of palm-wood, and is provided at either end with a single short and sharp point, which is stuck into the edge of the manta just below the line along which the weaving is being done. [824]

The batten (*c*) is a flat piece of wood, usually about two or two and one-half inches wide, and of a length six or eight inches greater than the width of an ordinary manta, or about three and one-half feet. Its edges and point are much like those of a heavy double-edged sword, and both the edges and the point are fairly sharp, thus permitting the point to be inserted easily between the warp strands and also allowing a direct and forceful blow

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286 to be struck along the full width of the textile with the edge of the sword. These swords are always made of
286 the wood of the quende tree. This is a reddish, very hard
824 and durable wood, the surface of which is made extremely smooth with the leaf, lya'pic hakı, which is used especially for smoothing wooden objects. The quende is a rare wood in this region, and the battens are, on this account and also by reason of the difficulty of their manufacture, highly prized by the Cayapa. In fact, the
286 batten or sword is the only part of a loom which it is at all difficult to make and which cannot be easily replaced if broken or lost.

The shuttle is simply a cylindrical double-pointed rod of palm-wood, about half an inch in diameter and of a length slightly greater than the width of the cloth. Upon this rod is wound the weft. Beginning near the middle, the first winding is done in a space of six or seven inches along the middle of the shuttle. In passing the thread from one end to the other of this wound section, approximately a half-turn of the shuttle is made, the thread being given a complete turn about the shuttle at the end of the wound section, then being passed back with another half-turn to the opposite end of the wound section where another complete turn is given to hold it in place. So the winding proceeds back and forth from end to end of this middle section, each time the turn of the thread at the end of the section holding it from slipping. The wound section gradually increases in length until, when the shuttle is completely wound, it measures twelve or fifteen inches and forms at the middle of the shuttle a cigar-shape section from an inch to an inch and a half

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since such weaving is done in large measure only at odd times.

The trunks or mocho (pl. CXVI) worn by the men is made of cloth woven by the women, a special narrow fabric being produced for this purpose. One of these pieces of cloth contains enough for two mochos. It is always cut and sewed by the men themselves, some of them being adept with the needle. The women know almost nothing about sewing. It ordinarily even falls to the men to make the small mochos for the boys until they are old enough to sew for themselves.

The subject of manta designs is treated under Decorative Art.

CORDAGE AND NETTING

In most cases cordage and nets are made of the fine, long, white fibers obtained from the leaf of the plant called in Spanish pita and in Cayapa sa′nō, and to a much more limited extent the fibers from the bark of a tree called in Spanish cosadera and in Cayapa señgī′lya are used.

The preparation and manipulation of pita, to which reference has been made hitherto, are quite elaborate. The long, slender, full-grown leaves of the plant are cut off close to the ground and brought to the house in bundles, such as those shown leaning against the house in pl. LXVI. While the leaf is still green the fibers are extracted by first scraping off the succulent portion of the concave side of the leaf and then stripping out the fibers from the remainder. For this scraping there are required a semi-cylindrical log of palm-wood, called sañwi cī′nō,

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283 lowest one in the bunch is brought down on the convex surface of the log, and with the corner of a knife the succulent outer layer is split throughout the length of the section of the leaf exposed. This allows the leaf to be easily flattened against the log so that the succulent layer may be scraped off with one of the edges of the knife (fig. 25).

283 413 [824] The knife used for this purpose is illustrated in pl. CXVII, 2. It is usually made from half of a section of wild cane (Spanish caña brava), and is ordinarily from fifteen to eighteen inches in length. The soft center of the cane is hollowed out so that only the hard, woody portion of the outside of the stalk remains. The two edges of this semi-cylindrical section are very sharp, thus producing a serviceable implement.

283 The succulent portion of the leaf having been scraped off and the fine fibers exposed to a length of eight or ten inches at the base of the leaf, the fibers are loosened with a thumb or finger nail and are then split loose as far up the leaf as the scraping has progressed by pulling them gently outward. A slit is then made in this scraped section and the loosened fibers are passed through and looped (fig. 25) in such manner as to prevent them from becoming tangled as the scraping proceeds farther up the leaf. When this half of the leaf is completely scraped, it is hung at the side of the pole and the corresponding portion of the next leaf is scraped.

Finally, all the lower halves of the leaves having been scraped, the upper halves which had been placed overhead are brought down upon the log and held in position by means of the horizontal cord which secured the lower

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PITA FIBERS, PLIES, AND CORDS

[p. 273(4)]

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283 several other cords are completed, these are added to the braids at the ends. Thus by adding group after group of these braids, when the whole bundle of cords is completed and both its ends are braided it forms a skein of cords which appears like that shown in pl. CXVIII, 3. The skein is kept in this form and the individual cords are extracted from its middle. This tends to pull backward and to loosen the braids at the two ends of the bundle and thus easily to free the ends of the individual cord from the braids.

[824] The other kind of string obtained from the bark of the tree called in Spanish cosadera and in Cayapa señgi'lya, is made in a manner similar to that employed in making pita string. The fibers used in making this string are obtained by beating out the bark by the method employed in making bark cloth. After being washed, as in the case of bark cloth also, these fibers are dried, folded, and bound into bundles (pl. CXIX, 2). When needed, the sheets are taken from the bundle and the fibers are separated and twisted into a heavy and rather loose cord which serves very well for making a hammock or as the main cable of a trot-line (pl. CXIX, 1), but otherwise is little used. The string bears the same Cayapa name as the tree itself, and its primary use is for hammocks, which are woven with the same technic as are fish-nets, shortly to be described. The meshes are, however, extremely large and are made without the aid of a mesh-stick, being kept sufficiently even by the eye alone.

[352 227]

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The Cayapa do not splice cords by twisting together the fibers at their ends, as is done by some Indians. An individual pita cord is usually from ten to sixteen feet

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The paddle is rubbed down with abrasive leaves called /ʌʸápis háki/. In working the blade of the paddle, a longitudinal ridge is left on both surfaces:

> Along this line the blade reaches a thickness of about three-quarters of an inch. At each side of these medial lines the blade is hollowed out very much after the fashion of a hollow-ground razor; otherwise its thickness is fairly uniform. The thickness of the blade decreases slightly toward the edge, so that the edge itself at the greatest width of the blade rarely exceeds three-sixteenths of an inch in thickness, and it may be as thin as an eighth of an inch.
>
> The handles or poles of the paddles are ordinarily from an inch to an inch and three quarters in diameter and are almost perfectly cylindrical. They taper slightly from the blade to the upper end, or what may be called the grip. In a woman's paddle this end may be truly called the grip, and it is usually notched in more or less of a fish tail form, . . . In the case of a man's paddle, however, a purely ornamental tip is put on the end, which is almost never touched in paddling (Barrett 1925:149-150).

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Benches: /čumbúlʸa/. These are small seats measuring from four to eight inches in height and from four to nine inches in width. They are always cut from one piece of wood and often have two supporting surfaces. Barrett reports eight types of which I have seen but three. Most commonly these benches are composed of three flat surfaces, less commonly the seating surface is concave. Barrett should be referred to for details of style and construction. (Barrett 1925: 154-157).

details of style and construction (Barrett 1925:154-157). 000

Dolls: /náwawa/. Dolls for children were scarce among the Cayapa of the Punta Venado section. Barrett briefly discusses dolls, and the impression received is that they were common. They were always made of a single block of wood, and were carved in both human and animal forms. No measurements are given, but they were very likely similar to the dolls of today, measuring usually twelve to thirteen inches in length and from three to four inches in width. They are most frequently carved out of Guayacan, an extremely hard wood. The one Guayacan doll in my possession is carved in two pieces. It is a seated figure, obviously of a white man, wearing a visored cap, a necktie cut in bas-relief, a jacket, breeches, and boots that are tinted reddish. He is seated in a two-legged chair which is sufficient since his own feet serve as the other two legs. The chair is fastened to the figure by two nails through the bottom, and five nails from the rear.

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At the present time, many models for play purposes are cut out of balsa in the forms of airplanes, and the forms of coastal banana boats. Other wooden articles

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is favored. In these cases, it is always the rear of the house that is raised about four or five inches. The rear of the house is the cooking area, and it is here that the firebox is located. A common size for the firebox is four feet by five feet and it is packed with earth to a depth of four to six inches. Three rocks form a pot holder within which a fire is contained. There will generally be one such rock hearth for each related family resident in the house. Behind the kitchen area a bamboo ramp about three feet wide and twenty feet long serves the boys and men as a urinal; a hole about three feet out from the house serves the girls, women and infants.

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The gabled roof is pitched at about a forty-five degree angle and is framed by long single lengths of bamboo. The thatch consists of the long leaves of the Tagua palm which may reach a length of fourteen to sixteen feet. From the midrib of the leaf, a series of leaflets extend out for approximately three feet. Two or three months before roofing, the leaves are cut down and collected in the Tagua patch and placed on a low bamboo rack for drying. Sometimes the Tagua patch is a considerable distance behind the house, in which

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pigs who find them especially delectable. The Cayapa seldom plant coconuts, but the Negroes do so whenever possible. Important palms are the Tagua and the Chontaduro. The tagua nut was formerly an extremely important economic product; its hard seed was in constant demand on the world market for the manufacture of shirt buttons. With the rapid development of the plastics industry some thirty years ago, the market for tagua seeds completely collapsed. The Cayapa still talk nostalgically of the days when money did apparently grow on trees. Though its export value has declined, the tagua palm, nevertheless, is still important to the internal economy: the leaves are used extensively for roof thatching, the nut is a minor item in the diet, and when the tree dies, the /mĭšu/, a delectable and very oily grub can be dug out of the trunk. Both men and woman may work in the gardens. Generally speaking, however, the men clear the garden and the women plant the seeds or roots. Men and women may harvest the crops.

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The staff of life for the inhabitants of the Pacific Lowland Culture Area is the plantain which is found in many varieties. It may be eaten green or

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men, and occasionally only one shotgun is available to share among them. 224

Fishing is an important adjunct to the dietary pattern. Fish are dynamited, netted, speared, trapped, drugged, and hooked. Often a man or boy will work his canoe up-stream and then drift slowly down while he plays his hook and line which are tied to a light pole. The fisherman baits his hook with a lively grasshopper, drops his line into the water, then holds his arm motionless except for a slight movement of his wrist which causes the line to move with a sinusoidal motion. This favorite method can only be used when the river is very low. At these times, in the evening, three men or boys go out in a canoe moving slowly along the bank. One man paddles, another holds a flashlight or a pressure lantern, and the third man stands ready with a fish spear. The light attracts multitudes of fish, and the haul is invariably a huge one. Lobster can also be easily trapped when the river is low. A lobster trap, called <u>catanga</u> is baited with plantain. It is set under water alongside a bank that has some protuberance, such as a pile of driftwood. The mouth of the trap is placed so it faces

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While this was going on, Gerardo, a minor brujo who is also Alejandro's father, rolled up some hoja blanca leaves in the shape of a cone, and placed it on the head of the patient who, by now, was sitting up. The old man then ran both of his hands up the patient's body toward the head. When he reached the forehead he squeezed tightly, quickly gathered up the conical "dunce cap," and ran off into the jungle where he threw it away. He had brought out some of the malignant spirits through the patient's head and into the hat. As this was going on, the patient kept looking at me out of the corner of his eye; finally he said to Gerardo, while pointing his lips at me, "He's real big;" at this, Gerardo asked if I would like to try removing some of the illness. I agreed with alacrity, and as I placed my hands along the patient's sides and began massaging upwards, he cried out: "/úra, úra/, which means "good, good." Gerardo and I worked together, and used up four cone hats. Throughout all of this activity, Alejandro kept humming and chanting, and taking long pulls at the rum bottle, and occasionally spraying some in our direction.

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At the conclusion of the curing ceremony, the